Twelve Tips for Using Applied Improvisation in Medical Education

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Abstract

Future physicians will practice medicine in a more complex environment than ever, where skills of interpersonal communication, collaboration, and adaptability to change are critical. Applied improvisation (or AI) is an instructional strategy which adapts the concepts of improvisational theatre to teach these types of complex skills in other contexts. Unique to AI is its very active teaching approach, adapting theatre games to help learners meet curricular objectives. In medical education, AI is particularly helpful when attempting to build students' comfort with and skills in complex, interpersonal behaviors such as effective listening, person-centeredness, teamwork, and communication. This article draws on current evidence and the authors' experiences to present best practices for incorporating AI into teaching medicine. These practical tips help faculty new to AI get started by establishing goals, choosing appropriate games, understanding effective debriefing, considering evaluation strategies, and managing resistance within the context of medical education.

Introduction

Interpersonal communication, collaboration, and adaptability are critical skills for future physicians. Yet, medical educators often struggle to teach these concepts because of their multidimensional nature and affective (or emotional) components (Ekman & Krasner 2017; Guseh et al. 2015; Hinkle et al. 2017). The challenges in students' development and mastery of these fundamental competencies have been further compounded by the rapid growth of electronic methods of medical documentation and communication. Other disciplines such as nursing (Hanley & Fenton 2007), pharmacy (Boesen et al 2009), business (Scinto 2014), and education (Rossing & Hoffmann-Longtin 2016; Sawyer 2011) are turning to applied improvisation (or AI), a branch of improvisational theatre, as an approach to help professionals build these important skills. These strategies also have potential in medical education (Watson 2011). By definition, improvisational theatre is a form in which most of a play or scene is produced spontaneously by the actors in the scene. The ability to do this does not come naturally. Rather, professional improvisers develop the ability to listen closely, focus, accept others' ideas, and support one another through improvisation games that allow them to practice and hone these skills. Applied improvisation facilitators adapt both improvisational theatre games and principles to teach learners in non-performance fields similar skills. Some AI facilitators refer to these games as "drills" or "exercises" because, like an athlete's drill or musician's scale, the games simulate consolidating tasks into memory through repetition. More importantly, in debriefing AI games, learners discuss how the skills they practice and the challenges they experience in the games relate to their professional context. AI in medical education is distinct from other theatre-based training techniques such as role playing, where students are asked to enact and improvise scenes (such as patient/physician encounters) with

peers (Steinert 1993). Though role playing may be used in some AI games, the core principles of can be seen as a lens that medical students use to effectively and spontaneously react to situations and interact with others in the clinical environment. By including AI games in their teaching, clinical educators can promote an environment conducive to trust, learning, team-based care, and effective communication. In the following tips, we offer AI as a compelling teaching strategy for medical educators. We argue that AI provides a unique perspective in resources and tools to incorporate it into individual teaching encounters or a broader communication curriculum.

Tip 1: Understand AI as both a mindset and an approach to training.

Well-established theatre theory and pedagogy provide the foundation for AI; however, AI does not train participants to be actors. Instead, AI allows medical students to practice the communication, listening, teamwork, and focus needed to respond to the spontaneous elements of physician/patient interaction and to cultivate mindsets like those described in Table 1.

[INSERT TABLE 1 ABOUT HERE]

Every professional environment requires collaboration and adaptability to change. Applied improvisation techniques teach participants to accept uncertainty and ambiguity as the conditions in which one must learn and work. It cultivates an other-oriented sensibility, geared toward empathy and collaboration (Leonard & Yorton 2015). Applying these principles in medical education is powerful because it promotes a culture of trust, resulting in stronger relationships for learning, team-based care, and patient-provider communication (Hoffman et al. 2008; Watson 2011).

That said, it is critical for faculty utilizing these concepts to understand the theory and approach others have taken. Understanding the theory and mindset behind AI gives medical

teachers the tools necessary to respond in a dynamic teaching context and to apply the appropriate AI tools to the learning goals.

Tip 2: Establish clear curriculum outcomes for AI. Make sure your games match your goals.

Applied improvisation is designed to accomplish specific curricular goals. Two principal theorists and practitioners of modern improvisation, Viola Spolin and Keith Johnstone, both designed specific games to help their students overcome particular challenges and develop particular skills. Their games (and other AI games developed by experienced improvisation actors) have proven valuable in improving skills such as listening, emotional connection, empathy, creating clear messages, working with a team, and trusting team members. These skills are vital for medical contexts.

Every game features what Spolin called a point of concentration or focus (1999 p. 22). This focus allows the teacher to isolate particular skills and techniques for more careful exploration and practice. While the focus provides boundaries that control the action, it also allows students the freedom to act collaboratively and spontaneously to resolve the problem of the game.

Medical educators should familiarize themselves with the specific focuses of particular improvisation games, and map those games to curricular outcomes. Table 2 provides a sample list of improvisation games with instructions and potential outcomes. For example, when responding to emergent patient resuscitation, physicians need clear, precise, team-based communication. To teach these cognitive and physical skills, you could use a game such as “Zip Zap Zop,” (see Table 2) which requires learners to engage both physically and mentally in the game. They must pay dynamic attention, remaining ready to send and receive messages

simultaneously. (Additional AI games are available in Dawson 2016; Koppett 2013; Schwartz 2014; Spolin 1999). [INSERT TABLE 2 ABOUT HERE]

Tip 3: Collaborate with experts in university theatre departments, community theatres, and/or improvisation ensembles.

First, medical teachers should consider professional development opportunities and seek support from established improvisational programs such as the international Applied Improvisation Network (AIN 2016), Medical Improv at Northwestern University (Watson 2011), the Alan Alda Center for Communicating Science (Alan Alda Center for Communicating Science 2016), or the Drama-Based Instruction center at the University of Texas at Austin (Dawson 2016). In addition to face-to-face courses, these programs host a number of online resources, videos, webinars, and conferences designed to give faculty the skills needed to use these techniques. Even with such professional development, faculty do not need to step into unfamiliar territory of improvisation without local support. Reach out to theatre and communication departments at your institution or neighboring universities and collaborate with theatre experts. Likewise, many U.S. and international cities have well-established community and/or improvisation theatres who might be able to partner with medical faculty to help introduce improvisation-based training to the learning environment.

Tip 4: Provide context for the technique.

Some students' only association for improvisation might be in theatre, comedy, or television contexts, like the television shows *Saturday Night Live, Whose Line Is It Anyway?,* or The Second City theatre company in Chicago. As such, introducing AI games into a medical school curriculum may cause many students to feel nervous, vulnerable, or fearful. Students might initially wonder how AI relates to medical education.

Prepare learners appropriately by providing context and background on the use of AI in professional contexts such as health professions, business, and law. Remind students that the skills and ways of thinking required for expert improvisation are applicable in situations in which people have to establish relationships, adapt to quickly changing environments, and work collaboratively with teams. Before beginning any curriculum that includes AI, assure students that AI games are not about acting or comedy; rather, they are about practicing the skills and ways of thinking that make successful clinicians. The games are specifically designed to promote collaboration, to improve listening and empathy, and to develop communication skills. Applied improvisation games could be compared to a classical pianist who consistently practices scales and finger drills, or the professional basketball player who practices layups and free throws every day. These games are about practicing *core skills* required for improvisation but that have broad application in medical settings. Just like confidence in clinical skills comes from practicing clinical skills, confidence in communicating with patients comes from practicing communication. Instructors should provide examples from other professional contexts and from medical education in particular to illustrate how AI can be helpful in improving empathy, communication, and listening skills (e.g. Bosen et al. 2009; Reilly et al. 2012; Watson 2011).

Tip 5: Prepare your "stage."

Applied improvisation requires connection. Participants must be able to face one another and engage one another. It also requires the freedom to move around a space. Avoid employing these strategies in a lecture hall or a space where students have physical barriers between them. Rather, adapt the space to enable free movement and connection. As much as possible, create an open space where students can stand or sit in a circle and engage the whole group. Ideally, students should be able to make eye contact with the entire group.

Tip 6: Establish trust and safety with appropriate sequencing of AI games.

AI may cause some initial discomfort, so it is essential to help students feel comfortable with the process and with one another. The games must be sequenced and scaffolded in such a way that students have experiences that cultivate trust among the learners and that make them feel comfortable to take competent risks and make mistakes.

Begin with introductory warm-up games to create a learning environment in which learners feel safe with one another. Name games and basic warm-ups such as "Zip Zap Zop," "Clap Passing," and "Invisible Balls" (Dawson 2016; Koppett 2013; Schwartz 2014; Spolin 1999) give students opportunities to connect and experiences in which they succeed collaboratively. These games also lend themselves to conversations about focus, presence, and engagement. Through such basic warm-up games learners come to feel safe taking risks and making mistakes before they engage in more advanced improvisation games.

When relevant, faculty should use appropriate debriefing strategies as they would in simulation or other experiential learning contexts. For example, when a learner seems to be checking off a list while practicing taking a patient history with a peer, the faculty member could say, "Remember, pay dynamic attention to your patients. They will not tell you the history of present illness in the order of your checklist. Be flexible, but attentive, like in 'Zip Zap Zop.'" By "calling back" to previous games, students are reminded of the skills they have already practiced and asked to reflect on connections among AI skills.

Tip 7: Expect resistance.

Some anxiety and fear is a natural part of trying anything new. Medical students are not accustomed to pedagogical approaches that ask them to play, to be silly, or to laugh throughout a process. As such, some AI warm-up games may appear at first to be disconnected from medical

education. Moreover, when some learners hear "improvisation," their defenses immediately rise: "I'm not an actor;" "I'm not funny;" or "I don't like to perform." Be prepared to explain to learners that the purpose of the games is *not* to train actors or to crack jokes. The purpose of AI is to learn and practice the same skills that professional improvisers use but to apply those skills in new contexts (see Tip 4). With more practice, these exercises have a cumulative effect and learners more readily apply the skills and principles outside the learning environment. In addition, appropriate scaffolding of exercises (see Tip 6) will help educators minimize resistance. Of course, no pedagogical innovation is universal, and some learners simply may not take to these approaches. This resistance is not a cause to abandon the approach; remember that these techniques can be used to complement a host of other innovative pedagogical approaches.

Tip 8: Provide formative feedback throughout each game.

Spolin stressed the importance of "side-coaching," a process by which the director or educator "can step into the excitement of playing in the same space, with the same focus, as the players" (1999, p. 28). During an AI game, the teacher cannot simply set the participants on a task, step back, and watch. Rather, the teacher must be present and active with the group so that he can recognize the group's needs, identify where the game is working or not, and work with the students to help them solve the problem. Side-coaching must not become a series of commands that participants must obey. In other words, teachers should avoid commands based on authority such as, "Do it this way or that way," or "Don't do this." Rather, faculty must offer side-coaching remarks in the spirit of empowering reminders, such as, "Share your voice;" "Support your fellow players;" "Discover connections with each other." Side-coaching should not distract students from their game; instead, side-coaching keeps students present and focused

on the process and the problem presented by the game, particularly if their attention and focus begins to wane.

Tip 9: Emphasize the interdependence of the team.

Team-based and interprofessional care are a necessity in today's healthcare environment. However, at times, our educational environment encourages individualized thinking and competition, thus limiting a team's success. A tenet of improvisational theatre is the focus on the "ensemble," rather than a single actor. In AI, this is translated to a commitment to the team's success, rather than the individual. Applied improvisation is especially useful to teach the skills necessary to function effectively in a small group, clinical setting. In AI, it is an actor's responsibility to "make their scene partner look good," and everyone is equally responsible for a scene's outcome. Thus, these two concepts place an emphasis on the success of the group, rather than individual competition. For example, in a game called, "One Word Story," each individual adds one word to a story in sequence. It is the responsibility of each team member to move the story forward, using only one word. The process itself actually mimics clinical care; each care team member's note and order must use the information from the previous provider to move the patient closer to the care goals. By incorporating a game like this into clinical or interprofessional teaching, learners experience the trust required to perform high-quality team-based care.

When implementing AI, you can maximize its success by placing your students in appropriately sized small groups (4-12). This size offers opportunities for discussing the applications and insights gained from AI and encourages the learners to depend on one another. Using pre-existing small groups or learning communities can reinforce the interdependence required for teams to function well together. Moments of competitive spirit among the groups

can be used to encourage to reflection on channeling competitive energy into the success of the team.

Tip 10: Debrief and make connections between the games and learning objectives.

While it can be an engaging addition to your teaching, it is important to remember that AI exercises alone will not help you to accomplish your objectives. In other words, AI games are not the answer; rather, they offer a tool to move students toward deeper learning and new insights. Therefore, after every improvisation game, learners should be encouraged to make sense of the game and apply the lessons and skills to their clinical and interpersonal contexts. Many of the debriefing techniques familiar to medical educators from the simulation literature are helpful in AI (Fanning, Gaba 2007). The meaning of the games come from the students' reflection process in debriefing. First, ask the students to reflect on the game itself: What skills were required to succeed? What challenges did they face? What made the game exciting or boring? Then ask the students to consider how the skills and habits required for the AI game might be used in common medical contexts such as initial patient consultations, emergency rooms, and the like.

Tip 11: Evaluate your AI curriculum.

Just as with other new instructional strategies and innovations, it is important to evaluate this approach. You will want to consider both your session objectives, as well as your overall objectives of your course or program. Applied improvisation techniques are most effective when they are considered in the context of a larger program, with learning objectives to guide both the games and the debriefing exercise. Because AI taps into the affective or emotional domain of learning, consider using practice-based assessment strategies such as OSCEs or reflection activities designed to elicit changes in students' attitudes and behaviors, rather than just medical

knowledge. Given that many students will not have experienced instruction using these strategies (Steinert 1993), consider asking students specific questions on mid- or end-of-course evaluations about their perceptions of the utility of these techniques.

Tip 12: Commit to the exercises and have fun!

Just as successful improvisers commit fully to their ideas and their scenes, successful implementation of AI in medical education requires commitment. With the preceding tips, trust that you have prepared yourself adequately and then jump in. Avoid apologizing for trying something different. Avoid hedging and giving yourself room to back out of the effort. Commit fully, have fun, and see what happens. The lesson plans and experiences may not always work as planned, but that is the nature of improvisation. Embrace those "mistakes" as opportunities and remember the improvisation principle that "everything's a gift." With practice and repetition, medical educators and learners alike will benefit from this pedagogical intervention.

Conclusion

In medical education, AI is particularly helpful when attempting to build students' comfort with and skills in complex, interpersonal behaviors such as effective listening, person-centeredness, teamwork, and communication. We hope these practical tips help faculty new to AI get started by establishing goals, choosing appropriate games, understanding effective debriefing, considering evaluation strategies, and managing resistance within the context of medical education.

Applied improvisation is a powerful strategy for exploring important concepts in medical education like teamwork, power structures, and patient-centeredness. Although AI is a useful tool in a variety of medical education contexts, you should have realistic expectations for what it can accomplish. It is most effective when it is clearly connected with curricular content.

Instructors should remind students that AI games are designed to teach a specific concept or to illuminate a hidden concept to stimulate reflective thinking and maximize the learning outcomes of the techniques. Take care to promote improvisational ways of thinking as one tool for teaching students to provide high-quality patient care.

In short, AI equips students with ways of thinking grounded in the building blocks of theatrical improvisation, allows them to practice these skills, and provides strategies to incorporate these habits into many aspects of their medical careers. By using games, it engages students both physically and mentally in behaviors of effective physicians, including flexibility and responsiveness to change, careful focus and attention to the present moment, and collaboration with others.

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Table 1. Key principles of applied improvisation, with translations into the healthcare context and examples.

Applied Improvisation Tenet	Translation to Healthcare Context	Example
Yes, and...	Translating "yes, and..." into the clinical context means that all patient communication is an opportunity to learn something and build upon it.	A patient wants an x-ray that is clinically not indicated. The physician uses the tenet of "Yes, and…" to understand the patient's perspective and goals of the interaction and uses that as platform to explore why the patient believes the x-ray is important. Together, they are able to determine a clinical course that is appropriate and addresses the patient's underlying concerns.
Recognize everything as a gift.	Looking for "gifts" allows clinicians to reframe errors and mistakes as opportunities to grow and provide quality care. This tenet encourages physicians to practice mindfulness with both patients and team members.	A junior physician orders a medication for a pediatric patient utilizing appropriate milligram per kilogram dosing. However, because of the child's weight, the calculation produces a medication dose that far exceeds the maximal dosing of the medication. The physician does not recognize this and orders the inappropriate dose. The hospital pharmacist finds the error, changes the dose, and notifies the physician of the error. This "gift" provides the physician with a critical insight into the potential pitfalls in medication calculations for children.
Make your scene partner look good.	All individuals are "scene partners" in the improvisation mindset. This tenet encourages physicians to recognize patients and care team members as equal partners. It discourages ego-centered mindsets that hinder collaboration.	During team rounds, an experienced nurse questions a medical student's care plan and respectfully recommends an alternative strategy. The student acknowledges and appreciates the nurse's insight and expertise and readily incorporates the nurse's strategies into a revised care plan for the patient. Both the nurse and the student leave the interaction feeling proud for providing quality care to their patient.

Table 2. Common learning goals in medical education, mapped to applied improvisation games that could accomplish those goals. Additional games are available in Dawson 2016; Koppett 2013; Schwartz 2014; and Spolin 1999.

Learning Goal	AI Game	Overview	Debriefing Questions
Improve focus on and connection with patients. Improve mental presence and block out distractions. Improve precise communication within a team.	Zip Zap Zop	Learners stand in a circle. One learner (A) claps his hands, ending in a pointing position toward another player and says "Zip!" This player (B) immediately claps and points at another learner saying Zap!" This third learner (C) points at another player saying "Zop!" The sequence continues in random order of players around the circle, always following the pattern "zip, zap, zop."	Describe what the focus/attention required for this game felt like. How would that focus/attention help in your interactions with patients and care teams? How could you achieve that level of focus/ attention in each patient interaction?
Improve listening ability. Reflect on when to contribute and when to listen.	Count to 20	Learners form a tight circle and shut their eyes. Someone says "one," someone else says "two," and so on. The goal is to reach 20. If two people say a number at the same time, the group starts over at one.	Was it difficult to hold back and allow others space to jump in? How did listening help you decide when to contribute? How does the flexibility required here help your interactions with patients/care teams?
Build empathy and connection. Attend to nonverbal communication behaviors. Listen to the needs of and partner with patients to accomplish health goals.	Mirror	Form pairs, and assign each person A or B. Partners face each other; their goal is to mirror one another's actions. First, A leads movement and B mirrors. Then, B leads movement and A mirrors. After each partner leads, debrief strategies that helped the team succeed (e.g. slow/ predictable movements, eye contact). Allow partners to try again, and remind the pair it is the leader's responsibility to help the partner succeed.	How did your perspective change between the first and second attempts at initiating/mirroring? How did it feel to take responsibility for your mirroring partner? What does it look like to take responsibility for and listen to the needs of patients?